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Realization of an Integrated Health Services Programme in Rural India

by Eric R. Ram

Social Services & Human Development
Community Participation & Action
Human Resources (Local Health Workers)
Existing Staff & Facilities (Government & Voluntary Agency)

INTEGRATED HEALTH SERVICES PROJECT, MIRAJ, INDIA

by

Eric R. Ram, PhD*

This article is based on a paper given by Dr Eric Ram at the Special Meeting held under the auspices of the 30-nation Executive Board of UNICEF in Manila, Philippines, in May 1977, and edited by Miriam Reidy. The illustrations are from photographs taken at Miraj by Helen Laugesen for the Voluntary Health Association of India.

INTRODUCTION

The contemporary system of medical care in India is founded on the system designed during the British "Raj" to cater to the needs of British troops, civilian expatriates and a small native population of favoured urban elites. Thirty years ago, following Independence, the responsibility for planning and providing health and medical services for India's entire population of about five hundred million people, half of whom are below the poverty line, fell upon the Indian doctors. Having been trained in the British system, and being unable to comprehend the size and complexity of the health problems, weaknesses and strengths of their own country and with no training in the skills of planning, organization and management, their reaction was to expand the existing medical services with slight modifications. As a result, India was left with a system of medical care which was very much Western and urban-oriented and which failed to meet even the basic needs of the vast majority of the population living in its 760,000 villages.

It became quite obvious to those who had been working in the villages for some years during the post Independance period that they were not really meeting the health needs of the people. A system of medical and health care which would reach the vast majority of the rural population in spite of the barriers constituted by difficult terrain, geographical isolation and poverty, needed to be evolved.

Even today, the training of young doctors provided by medical colleges does not take the realities of the Indian situation into full consideration and what is taught has little relevance to the social, cultural, economic and health needs of the majority of people among whom doctors work. Some steps to reorient young doctors to 'serve the people' have been introduced in the form of rural internships, mobile hospitals, medical camps, short courses in community medicine, etc., but have failed to generate a real interest and desire among them to go out to the rural areas to 'serve the people'.

India's overall medical and health care problems have been further compounded by the following factors:

1. About 80% of the people live in villages while only about 20% of existing medical and health care is available to them. On the other hand, 20% of the people live in the cities and towns and receive 80% of the medical and health care.

2. Most fully qualified doctors, nurses and other health staff will not live in the villages and, of those who do, many are not fully able to relate to the rural people.

3. Eighty percent of all deliveries are conducted by 'Dais' (indigenous midwives, generally known as Traditional Birth Attendants).*

4. Various national health schemes such as the National Malaria Eradication Programme,

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* Information derived from a survey conducted in 1974 by the project staff.

National Smallpox Eradication Programme, Cholera Control Programme, Leprosy Control Programme, National T.B. Control Programme, National Maternal and Child Health and Family Planning Programme, Trachoma Control, Control of Communicable Diseases, Vital Statistics Recording, etc., have been introduced from time to time. This may have been necessary in the early stages of providing improved health services but, in the maintenance stage of these programmes, considerable duplication of activities has been noticed. Thus, in one area, several health programmes with their own sets of workers may be running side by side.

5. Various voluntary health agency programmes, such as the Miraj Medical Centre, were not relating to, or were running parallel to, government health programmes.

It was in response to these factors that the Integrated Health Services Project at Miraj came into being.

Objectives of the Project

In July 1973, with the difficulties, problems and aspirations of the rural people to improve their own health very much in mind, a three year Integrated Health Services Project was undertaken in collaboration with Maharashtra State, Sangli Zilla Parished (District Administration), Miraj Medical Centre and the Christian Medical Commission of the World Council of Churches. The principal aim of the project was, and is, to provide basic health and medical care to all sections of the rural community.

To fulfil this aim, a number of specific objectives were set. They were:

1. To establish an **integrated** health service, based on an infrastructure which puts existing facilities and resources to best use.

2. To retrain uni- into multipurpose health workers to work within such an integrated health service and, further, to train indigenous health workers such as Dais, Health Aides, Health Promoters and indigenous medical practitioners – since these constitute the existing human resources of the area – to provide basic health care within the framework of the integrated health service.

3. To raise community involvement and participation in their own health care, using health education for self-help.

4. To coordinate with government health services.

The Project Area

Again with the difficulties, problems and aspirations of rural people particularly in mind, the Project was undertaken in the rural setting of Miraj Taluka of the Sangli District of Maharashtra State, India. Miraj town is about 150 miles south of Poona. The temperature of the region varies from 20°C in winter to 42°C in summer. Annual rainfall is 46 cm (18 inches). State Road Transport facilities are available to most of the villages. Most of the rural area forms a plateau at 600 m (1,800 feet) above sea level. The main crops growing in the area are jawar, millet and peanuts. Some wheat, rice and sugar cane is grown in a few villages on the banks of the Krishna river.

In 1973, the population of the Miraj Taluka was 216,335, living in 58 villages spread over an area of 910 km^2, with a population density of 238/km^2. The following statistics, recorded in 1973, present a descriptive profile of the people of the project area.

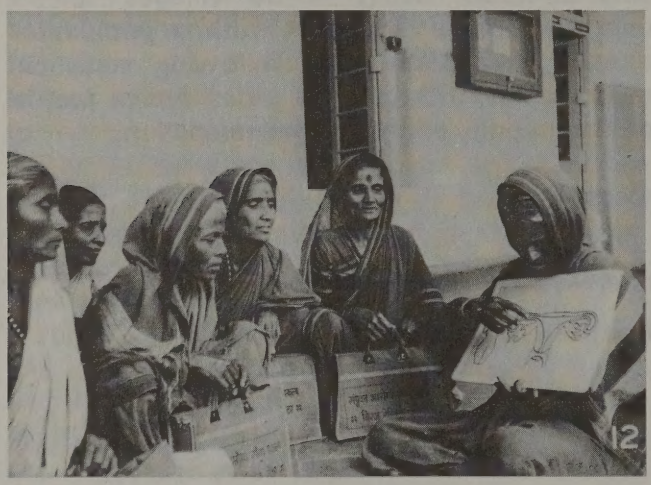
Occupation:	60% cultivators 23% agricultural labourers
Literacy:	52% literate
Age:	11% below 5 years of age 29% between 5 - 14 44.3% between 15-44 10.2% between 45-59 5.5% 60 years or more
Religion:	77.7% Hindu 14.7% Jain 6.0% Muslim 1.0% Christian 0.6% Buddhist
Source of drinking water supply:	58% from open wells 11.5% from rivers 18% from tubewells 11% from tap water 1.5% from covered wells
Marrying age (of women):	95.6% married before 20 50% married between 10-14 7% married before 10 0% married after 29

Some statistics, also recorded in 1973, which describe the households of the project area are:

5.8 people per household
45% one-room houses
60% without windows
5 latrines per 100 houses

Training and Retraining of Health Workers

Before all the potential human resources of an area can be utilized within an integrated health service, training and retraining of many different categories of local and non-local indigenous health workers is necessary. In the Miraj Integrated Health Services Project, the training of Dais, Village Health Aides and Health Promoters and the retraining of uni-purpose into multipurpose health workers is of a very practical nature. It consists, firstly, of a one-week training period for all the trainees including the medical officers of the primary health centres. All the basic health workers and auxiliary nurse-midwives and their



Training of health workers

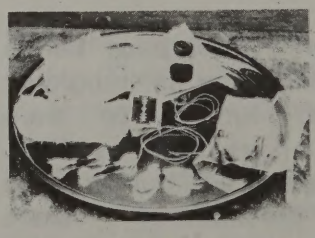
supervisors undergo an intial training of six weeks. The supervisors undergo an additional training of two weeks. Teaching methods emphasise practice, persuasion and guidance approaches. Therafter, continuing education sessions once a month for all categories of staff become a part of the regular activities. Experience showed that, although the initial six-week training period gives trainees a good start, it is the continuing education which sustains and improves their knowledge and skills. It also helps in developing positive attitudes and self-confidence in respect to their new roles.

Indigenous Dais: The baseline survey data collected in early 1974 indicated that, of all the deliveries conducted in the past in the project villages, 80.6% were conducted by Dais, 11.1% by trained auxiliary nurse midwives, nurse-midwives and doctors, 6.3% by patients' relatives and 2.0% at the hospitals and primary health centres. The survey also showed that 90% of the deliveries were conducted in the home.

With the help of local communities, Gram Panchayats (village councils), auxiliary nurse-midwives, nurse-midwives and the public health nurses compiled a list of all the practising Dais in the 58 villages, of whom there were 186. On the average, each village had 3.2 Dais or 1 Dai per 1,200 population. Out of the total of 186, 173 Dais (93%) readily came for and received training.

The basic aim of training is to utilize available human resources to improve midwifery services in rural areas. While not trying to change too much too soon in the actual practices of the Dais, emphasis of the training is on simple but scientific techniques of conducting home deliveries with the elements of good antenatal, intranatal and postnatal care, basic cleanliness and hygiene. Dais are taught to recognize danger signals in pregnancy and labour so that they are able to refer cases or call in help at a sufficiently early stage. They are also taught to motivate their patients to use one of various methods of family planning as well as to contact defaulters. The simplest kind of health teaching is employed, making use of flash cards and flannelgraphs.

The training is conducted by the public health nurse, nurse-midwife and auxiliary nurse-midwife of a sector at sector headquarters. Initial training is for 7 days with a further day of training after 15 days. This is followed by a day each month in subsequent months.



Contents of a Dai's delivery pack

Each Dai is provided with autoclaved delivery packs. She uses 1 delivery pack for each delivery. The pack contains a razor blade, 2 pieces of 9 inch long thread, 2% iodine solutionin a used penicillin bottle, 2 cotton balls and 2 Q-tips and a piece of cotton cloth. The cost of such

a delivery pack is 50 n.p. (US$ 0.05). Training and utilization of Dais as a part of the total health team has proven very effective and useful both in terms of improving MCH service and in increasing their acceptance and respectability in their village communities.

Village Health Aides and Health Promoters: Previously, each auxiliary nurse-midwife was provided with a local part-time woman attendant who was paid Rs 50* per month. Her main job was to sweep the subcentre and accompany the auxiliary nurse-midwife on house visits or home deliveries. This seemed such an under-utilization of this category of staff that special training was organized to transform these local women, who knew their community well, into useful members of the health team.

After an initial week's training, their designation is changed from « Part-time Attendant » to « Village Health Aide » and their wages raised from Rs 50 to Rs 60 per month. They work directly under the supervision of the auxiliary nurse-midwives, are able to do early reporting of pregnant women and postnatal cases, births and deaths, communicable diseases, fever cases, neonates and infants unprotected against smallpox. They collect infants and under-fives for DPT, Polio and BCG, bring mothers for TT and contact defaulters. They help in doing dressings and, in the nurse's absence, distribute simple medicines for minor ailments. They pack and distribute iron and folio acid tablets, motivate women for family planning, distribute pills (refills), contact defaulters for family planning, antenatal cases, TB, Leprosy, DPT, TT, etc. They accompany the nurse during home visits and home deliveries. So far, 40 indigenous village health aides have been trained.

Out of 173 Dais, 20 have been selected and trained to be health promoters in 20 villages where there are no subcenters.

Indigenous Medical Practitioners: The baseline survey conducted at the beginning of the project revealed that a vast number of villagers, especially in villages farther away from the towns, were relying on indigenous practitioners for medical care, just as they did on Dais for deliveries. Thus, it was appropriate that indigenous practitioners should be integrated into the health team. Six Ayurvedic* doctors and 6 Allopathic doctors (MBBS doctors) are thus included in the team on a full-time basis. The former are in charge of Ayurvedic clinics while the latter are responsible for the primary health centres. Within a 3-year period, the Ayurvedic doctors treated 40% of the total of 388,295 patients treated by the team. This is significant, as the area which they cover is inhabited by only 12% of the total project population. Ayurvedic medicines and some allopathic medicines are used by these doctors.

Also serving the project area on a private basis are 62 untrained practitioners of Ayurvedic medicine, 33 RMPs (registered medical practitioners with no formal training), 3 practitioners of 'Homeopathic medicine', 1 Unani medical practitioner*, 17 'Vaidyas' (herbalists) and 3 bone-setters. One of the tasks of both the allopathic and ayurvedic trained doctors of the health team is to conduct on-the-job training for these practitioners. When the trained doctors go to a village on their weekly visit, they invite the local indigenous practitioners to the health centre or health post to join them in examining and treating patients. This training method is beneficial to both parties concerned. The untrained practitioners are encouraged to continue most of their traditional practices while being persuaded to discard some of the non-scientific ones. One of the hardest walls to break is belief in certain age-old superstitions. However, with the passage of time, a great change in overall attitudes is taking place in this regard; a process from which the trained doctors also benefit.

The untrained practitioners appear happy to be associated with the health team and to be seen in public with team members. They greatly appreciate the recognition they thus, deservedly, receive. As time goes on, mutual trust increases and the health auxiliaries also begin to consult with the indigenous practitioners and refer patients to them for certain ailments. This removes their initial fear that the health team is there to take away their jobs and further stengthens relationships. Rural people have great faith in these practitioners and, in most cases, they are the first contacts for the majority of ailments. Therefore, their increasing health knowledge is of the utmost importance.

* 7.50 Rupees = U.S.$ 1

* See box over.

THE AYURVEDIC system of medicine has been part of the Indian culture for over 3,000 years. Ayurveda means, literally, the "science of life". Life is defined as the union of body, senses, mind and soul. Man is also a combination of three humours, seven basic tissues and three excretions which consitute the body matrix. Disease is the result of an imbalance of these. The healthy man is defined as "he ... who possesses a balance of body humours, proper functioning of all the body elements and who has a pleasant disposition of mind, soul and sense organs". Thus, he who wishes to study medicine must understand man as a whole and appreciate his psychosomatic constitution. The growth and development of the body depends on its nutrition.

Ayurvedic medicine has a wide range of therapeutic methods and measures. The four main **curative** aspects of its practice are:

- Administration of medicine internally (great importance is also attached to diet).
- Administration of medical preparations externally.
- Surgical measures.
- Treatment by psychosomatic measures.

The **preventive** aspects of Ayurvedic practice consist of:

- Personal and social hygiene.
- Use of rejuvenating measures to prevent ageing and decay.
- Practice of Yoga to provide tranquillity of mind and complete physical relaxation.

The technological methodology of Ayurvedic clinical examination is similar to that of modern medicine, the primary methods being clinical history and five-fold physical examination using the five senses. However, greater emphasis is given to the constitutional aspects of patients, their nutritional status and their psychosomatic integrity. The pulse examination forms an important part of the clinical methodology. The patient is examined and treated as a whole.

In recent times, it has taken more than a century to standardize Ayurvedic training. More than 100 Ayurvedic colleges have now been established in India which have trained some 50,000 physicians, of whom nearly 7,000 are products of colleges integrating Ayurvedic and modern medical science. Admission standards, duration of training and internship period are quite similar to those of modern medical colleges. In addition to the institutionally trained Ayurvedic physicians, there are about 150,000 non-institutionally qualified registered practitioners of Indian medicine, including the Ayurvedic and Unani systems.

The origin of the UNANI-TIBB system of medicine can be traced to early Greek medicine and owes its present form to the Arabs who rendered it into Arabic and enriched it with much of their own knowledge. It is also based on the theory of humours. The temperament of each individual is expressed according to the preponderance of these humours and drugs are determined according to the temperaments. As in Ayurveda, Unani physicians attach great importance to diet as well as medication.

Evolution of an Infrastructure Based on Existing Facilities and Resources to Provide an Integrated Health Service

Since one of the basic aims of the project is to evolve an infrastructure which maximizes utilization of existing structures, facilities and personnel in a meaningful way, the following new pattern has developed out of the existing pattern, following the initial training and retraining process described above.

Table 1

Old vs New Patterns of Staff Utilization

	Old Pattern (Unipurpose workers)	(Re)Training	New Pattern (Multipurpose workers)
Male Staff	Vaccinators Malaria Surveillance workers	(9) * (19)	Integrated basic health workers, each covering an average of 7,700 population (28) *
	Sanitary inspectors Malaria health inspectors Family planning coordinators	(3) (3) (3)	Integrated health inspectors, each supervising 3 basic health workers (BHWs) (9)
	Senior malaria health inspectors Senior sanitary inspectors of National Smallpox Eradication Programme	(2) (1)	Integrated health supervisors, each supervising 3 health inspectors and 9 basic health workers (3)
	Extension officer (Health)	(1)	Post wasted and man transferred to district headquarters

* ( ) = number (re)trained over a 3-year period

Table 1

	Old Pattern (Unipurpose workers)	→ (Re)Training	→ New Pattern (Multipurpose workers)
Male Staff	Medical officers of primary health centres	(6)	Medical officers holding clinics at subcenters once a week as well as supervising the field staff and acting as team leader. (6)
	Ayurvedic doctors (already practising but without recognition of their work)	(6)	Ayurvedic doctors in charge of ayurvedic clinic/dispensaries (6)
Female Staff	Auxiliary nurse-midwives (ANMs)	(40)[1]	Auxiliary nurse-midwives trained in community nursing and covering a population of 5,400, on the average. (40)
	Nurse-midwives (NMs)	(10)[2]	Nurse-midwives supervising the work of 4 auxiliary nurse-midwives (10)
	Public health nurses (PHNs)	(2)[3]	Public health nurses supervising the work of 5 nurse-midwives and 20 auxiliary nurse-midwives (2)
	Local part-time attendants	(40)[4]	Indigenous health aides, each responsible for a subcenter (40)
	Indigenous Dais (already practising but without recognition of their work)	(186)	Indigenous Dais working as a part of the health team, each serving a population of 1,200, on the average (173)
	Indigenous Dais	(20)	Indigenous Dais working as health promoters in those villages where there are no sub-centres (20)

[1] 24 in the field previously and 16 more added by the project.
[2] 6 in the field previously and 4 more added by the project.
[3] Both added by the project.
[4] 24 previously present and 16 added by the project.

Coordination Between Indigenous Village Workers and the Existing Health System:

Coordination between village workers and project staff takes place at all stages of selection, training, work and performance evaluation of the indigenous workers.

As can be seen in the above table, the Miraj Project uses 3 main types of female village health workers, namely the Dais, health promoters and village health aides. Criteria for the selection of the 3 categories differ.

Only practising Dais are selected. The Gram Panchayats, auxiliary nurse-midwives, nurse-midwives and public health workers identify and jointly select these practising Dais. The selection of village health aides is generally done by the Gram Panchayats, based on the following simple criteria: the person should be a local woman about middle age, unemployed, preferably married, with motivation to learn and serve her community. Health promoters are selected from among the village health aides in villages where there are no subcenters.

Dais have no fixed wages and are paid an honorarium of Rs 3 per delivery by the project. The auxiliary nurse-midwives register all pregnant women and provide antenatal care, but for home deliveries, either an auxiliary nurse-midwife or a Dai may be called. The Dai conducting a delivery utilizes her delivery pack and has the details written in her notebook by someone like a school boy. She immediately informs the auxiliary nurse-midwife of her section, who verifies the case, puts her initials on the Dai's notebook and provides postnatal care along with the Dai. Dais refer difficult and abnormal cases to the nurses and doctors and, if necessary, to primary

health centres and hospitals for hospital delivery. Once a month, all the Dais of a sector get together with the public health nurses, nurse-midwives and auxiliary nurse-midwives of that sector for one day's training, during which time they are paid for the deliveries they have conducted, and also collect their fresh supplies of delivery packs. This process is repeated for all 10 sectors every month on a continuing basis. Dais also inform the auxiliary nurse-midwives about antenatal cases, postnatal cases, motivate family planning patients, collect children for various immunizations, report births, deaths and communicable diseases to the basic health workers and do health teaching in the homes of their patients. Thus, they work very closely with the auxiliary nurse-midwives and the basic health workers. They participate in their weekly meetings as well.

A similar relationship exists between health staff and the village health aides. These workers receive an honorarium of Rs 60 per month from the project. They work in close collaboration with auxiliary nurse-midwives and relate their relevant activities with those of basic health workers. They too attend a monthly training day and participate in the weekly meeting of the auxiliary nurse-midwives and basic health workers. They are directly responsible to the auxiliary nurse-midwives for all their activities and services. The Gram Panchayat provides informal supervision of both these categories of village health workers. They serve as a direct link between the community and the governmental health care system, in the absence of a more rigid relationship.

These two categories of staff have admirably filled their roles and serve their communities in a way that has changed the health status of those communities. They consider themselves a part of the total health team, are proud to make their contribution and are happy to receive due recognition, thus increasing their credibility and respectability in their villages.

Division of Villages into Work Areas:

To facilitate better administration and supervision of health services, the project area is divided into smaller work areas for both male and female staff according to job responsibilities. For the male staff, the 58 villages are divided into 3 units, 9 sectors and 28 sections, corresponding to 3 health supervisors, 9 health

A health worker visiting a village in her work area.

inspectors and 28 basic health workers. For the female staff, the project area is divided into 2 units, 10 sectors and 40 sections, corresponding to 2 public health nurses, 10 nurse-midwives and 40 auxiliary nurse-midwives. Keeping in mind the topography of the area, the division is made in such a way that a basic health worker has an average population of 7,700 while an auxiliary nurse-midwife has a population of 5,400. The 20 health promoters have been placed in those villages where there are no subcentres.

Table 2

Distribution of population covered by primary health centres, subcentres and health posts (1976)

	Villages	Population	Percentage
Primary health centres	3	26,795	11.7
Subcentres	35	176,797	77.2
Health posts	20	25,480	11.1
Totals	58	229,072	100.0

Each primary health centre is staffed by 2 doctors and 2 nurses. The medical officers hold clinics at the subcentres once a week and at the health posts once every 2 weeks. Subcentres are staffed by auxiliary nurse-midwives and village health aides; the health posts by the health promoters.

Supervision: The lines of coordination between Dais, health promoters, village health aides and the project health staff described above indicate the degree to which these workers are included and respected by the health team as members of the team. They also receive regular supervision by the team staff, with supervisors acting as friend, guide, helper and educator. A combination of 90%

concurrent and 10% consecutive visits by the supervisors is found to be most effective. Because of this continuing training and help, an excellent relationship exists between the indigenous health workers and their supervisors, which is a major factor in the high motivation for improved performance.

Keeping Simple Records and Making Simple Reports: Earlier in the project, the health team conducted a baseline survey on the health of the families living in the project area. This basic information was maintained in a 'family folio' in a register. It included demographic data and information on the immunization status, births, deaths, family planning status, or special problems of the family.

This information is updated each month during the health worker's monthly visit to the family. Within a year, the health workers become so familiar with the families within their area that most of them know the family members by name. The auxiliary nurse-midwives come to know the women so intimately that they even have records of their menstrual cycles. This information is very valuable in detecting early pregnancies and providing antenatal care as well as in giving appropriate family planning advice.

The basic health workers and the auxiliary nurse-midwives use simple printed forms, in which they enter data in appropriate columns. The Dais, health promoters and village health aides, most of whom are illiterate, are given a simple notebook in which school children enter the basic information for them such as mother's name, date of birth, sex of newborn, etc.

This information is shared with the project staff and the village health committee once a month during the monthly meeting. The project office compiles a report each month and shares it with the district health office and the Gram Panchayats. Every three months, a collective report is compiled by the project office and is returned to each health worker to enable him/her to see his/her work in relation to that of other workers as well as against his/her own previous performance. This three-way feedback system is found to be very useful.

Community Involvement and Participation

Community involvement and participation in the Miraj Project started at the planning stage with the aim of making it a people's project rather than one imposed on them. As the project moves on, community involvement also deepens. From planning, the community has moved on to implementation of the project itself. Elements of self-help as well as partnership in health care are everywhere in evidence. The community is responsible for finding and providing a house for the subcentre and a home for the auxiliary nurse-midwife. The community arranges for mass immunizations and collection of children for vaccination. Community members maintain close supervision over chronic TB and leprosy patients to ensure domiciliary treatment on a long-term basis. They help trace defaulters and persuade them to continue treatment. They share the cost of water disinfection by 50% of the costs of TCL (bleaching powder). They organize and conduct 'Gram Safai' (village cleanliness) on a self-help basis. They help identify the Dais and the local village health aides. They form health committees as one of the sub-committees of the village councils. Through the health committees, they coordinate all health activities in the villages. People look upon the project as their own and take pride in it.

Health Education for Self-Help: Health education on simple health principles, hygiene and sanitation, given to rural communities, forms the basis of all health services in the project. Education for self-help is emphasized as a result of the realization that, in spite of having trained doctors, basic health workers, auxiliary nurse-midwives, Dais and village health aides, there are not enough of them to go around to meet all the needs of the community. People are therefore trained to take care of themselves for some things, to go to the indigenous practitioners and Dais for others, to the primary health centres for still others and to the district hospital for certain specific needs. Health auxiliaries play an important role in imparting to the people a basic knowledge of their own bodies, prevention of certain illnesses, cure of others and health in general so that they are not totally dependant on the established health care system.

A considerable amount of the health auxiliaries' time is spent teaching people that diseases are not caused by the wrath of God, or ill fate, but by germs, and that many of them can be prevented by improving health habits. They are taught to recognize basic signs and symp-

toms of some common illnesses and when and where to seek help. One of the examples of what people can do at home successfully is management of diarrhoea by home-made rehydration solution.

Because health auxiliaries spend much time with families on health education, a change in their attitudes can be seen. They become more sensitive to people's needs and establish closer interpersonal relationships. Over the months, they develop more confidence and are shown greater respect by the community.

A health auxiliary confers with a member of the village health committee.

Health Committees: One of the first things done earlier in the development of the project was to help the Gram Panchayats to form a health committee for each village. The health committee members are elected by the council and consist of at least two women plus two people from the 'harijan' (low) caste group, in a committee of seven people. This Gram Panchayat health committee is responsible for the health of the village, and a copy of the health report prepared by the health workers is submitted to it each month. In the beginning, it seemed rather odd that even the paid government workers should make their report to the committee but, with the passage of time, the committee itself assumed greater responsibility and served as a liaison between the Gram Panchayat, the health staff and the community. The committee helps interpret the health needs of the people as well. One of the most important benefits is that people feel that the health team is there to serve them so that they can demand and utilize its services. This is quite evident, for example, from the fact that there are no fixed hours at the health centres and people come to the basic health worker's home to have a blood smear taken or to collect their medicine for fever even at night.

Coordination with Government Health Services

In a developing country like India, any duplication of health services cannot be afforded. From the very beginning, therefore, the Miraj Project was undertaken jointly by a voluntary agency and the government. The Government of Maharashtra should be commended for allowing all its health staff, including the medical doctors of the primary health centres, to work under the project director of a voluntary agency. This is an example of the true spirit of cooperation, trust and unity being put into practice. The result is the complete absence of duplication of health services. The previously existing health services have been tremendously strengthened by this joint effort. If either agency had attempted such a project alone, it would have been very difficult for it to have achieved the same results.

Going one step further than cooperation on a particular project, the Maharashtra Government has adopted the project pattern and its training programme as a model for other areas. Implementation of this policy began in 11 out of 25 districts in 1978. The Central Government has also accepted the integrated pattern of health care and has introduced it in other states as well, under the designation of "Multipurpose Health Workers' Scheme".

The Miraj Project has been so designed that the government continues to pay for previously existing staff and services while the project pays for the additional input and the community itself pays for a portion of the medical care it receives.

The total cost of the health services comes to Rs 865,400/year for the 3 primary health centres in the project area. Out of this, the government pays 74% of the cost while 26% is paid by the project. However, most of the extra expenditure goes into the development of subcentres, health posts, training and services of indigenous Dais, village health aides, medicines, etc. which, in fact, greatly strengthen the existing health services. It is useful for the government decision makers to see where the extra 26% must be invested to get maximum benefits.

Table 3
Summary of Annual Expenditure
(Rs)

	Government	Project	Total
Salary – ANMs, BHWs and their supervisors, doctors	485,000	123,000	581,000
Honorarium – Dais, VHAs, HPs	–	15,000	15,000
Salary – non-service staff	131,400	18,000	149,400
Medicines	18,000	42,000	60,000
Training – ANMs, BHWs and their supervisors	–	13,000	13,000
Training – Dais, VHAs, HPs	–	8,000	8,000
Transportation	12,000	10,000	22,000
Non-medical supplies	–	7,000	7,000
Subcentres and health post maintenance	–	10,000	10,000
Total	646,400	246,000	865,400
Less community payment for medicine	–	20,000	20,000
Total	646,400	226,000	845,400
Percentage	74%	26%	100%

Services Provided by the Project

The health services provided are a combination of curative, preventive and promotive types of care. All sections of the population are benefited by the services.

The male and female staff have different job responsibilities. The following services are provided by female health staff:

Care of mother and child.

1. Maternal Care: The auxiliary nurse-midwives, health promoters, Dais and village health aides systematically visit each home and register every woman who is pregnant for 3 months or more. Antenatal care is given throughout the antenatal period. Blood is examined for albumin and sugar, blood pressure is checked and recorded. All the female staff are taught to recognize the difficult and abnormal cases using the 'at risk' method. Each antenatal case is given iron and folic acid tablets for at least 3 months. She is also given 2 doses of tetanus toxoid in the last trimester of her pregnancy by the auxiliary nurse-midwives.

Special nutrition education and demonstrations are organized for antenatal mothers. About 65% of the deliveries are conducted by trained Dais at home, 30% by auxiliary nurse-midwives at home, 3% by patients' relatives and 2% at the primary health centres and hospitals. Thus, about 97% of all deliveries are conducted by trained personnel of various categories. Education of the mother continues throughout her pregnancy in various aspects of antenatal care and care of the newborn. Postnatal care is provided for up to 40 days after delivery. The auxiliary nurse-midwives and nurse-midwives supervise the maternal care given by Dais and village health aides.

2. Child Care: Every child under 5 years of age is registered by the auxiliary nurse-midwife. The Dais, health promoters and village health aides help her in this regard. By measuring the midarm circumference of children with a tricolour tape, they are judged to be receiving normal nourishment, being borderline or undernourished. If the child is borderline or undernourished, his weight is taken and recorded on the 'Road-to-Good-Health' chart each month. Special food supplements are given to these children. Special care is given to children

suffering from acute diarrhoea, dysentery or gastroenteritis. A child is also considered 'at risk' if he weighs less than 1.5 kg. at birth, fails to gain weight in 3 successive months or loses weight in 2 successive months, or if his weight is less than 65% of the norm for an Indian child of his age.

A regular and systematic immunization programme has boosted the immunization status of children under 5 in the community. About 99.7% of them have received primary vaccination against smallpox. About 82% have 2 doses of DPT and Polio vaccine and about 60% have BCG. The general shortage of vaccines has hampered further acceptance of immunization programmes.

The village-level workers are taught to screen children, and mothers are taught to recognize danger signals indicating children 'at risk'. They are also taught to feed early and give foods which are readily and cheaply available in the villages.

3. Simple Medical Care and Referral of Difficult Cases: Treatment for minor ailments is provided by auxiliary nurse-midwives for half a day each day at the subcentres. It has been noticed that about 80% of the patients are taken care of by health auxiliaries in the subcentres and in the health posts. Difficult cases are referred to doctors and are seen by them during their weekly visits and, if necessary, referred to the nearest primary health centre or district hospital for immediate attention. Although no more than about 2% of patients require referral, it is nevertheless felt that a referral system is an essential part of the service.

Each patient is charged 0.25 n.p. for any one type of medicine given for 3 days. An amount of about Rs 20,000 per year is collected through this source which is ploughed back to buy more medicines.

4. Family Planning: A household survey has been conducted and an updated list of all married women according to parity is maintained. Family planning advice is given and motivation done according to parity. Refills of oral pills and 'nirodh' (condoms) are given to the prospective acceptors. Follow-up of sterilized couples and contraceptive users is regularly done. Women motivated for tubectomy are brought to the primary health centre or the hospital for the operation. Vasectomy is generally done at the subcentres and primary health centres.

School health

5. School Health: The health staff give health education in all the schools in their jurisdiction. They also conduct physical examinations of all the school children once a year, recording their findings on individual school health records. Those children found with defects are referred to the doctors during their weekly clinic visits. This saves the doctors much time and frees them to do other pressing jobs. Environmental sanitation in the school is also stressed by making proper provision for drinking water, latrines and urinals for the boys and girls. All school teachers are involved in the school health programme.

6. Health Education: Home visits are made for half a day each day. One of the main purposes of the home visits is to impart health knowledge to family members. Simple audiovisual aids such as flash cards, flip charts and flannelgraphs are used. Various demonstrations are given to groups of mothers.

One of the endeavours has been to educate the public in regard to the availability and utilization of health services in their villages. This is done by distributing a printed pamphlet in each home, describing all available health services. This method has had a far-reaching effect in raising community awareness. As a result, the utilization of health services has greatly increased and many individuals and Gram Panchayats have begun to approach the project staff directly if they find any difficulties or disparities in the health services.

7. Prevention of Blindness: An effort to prevent blindness was mounted from the beginning of the project. The basic health workers and auxiliary nurse-midwives treat eye infections and conjunctivitis at a very early stage and teach people how to protect their eyes from infection and injuries. Infants and children under 6 years of age are given Vitamin A concentrate once every 6 months to prevent Vitamin A deficiency. By January 1977, 32,399 doses of Vitamin A concentrate have been given to this age group.

Health workers are taught to recognize cataract and send such patients to the hospital for cataract removal. In September 1976, a special eye camp was arranged at the Miraj High School with the help and cooperation of Miraj Panchayat Samiti, the Lion's and Rotary Clubs and the Miraj branch of the Indian Medical Association. Dr. Modi, the famed eye surgeon, examined more than 2,500 patients and operated 706 from the project villages, removing their cataracts.

Health staff advise mothers to include such locally available vegetables as carrots, drumsticks and drumstick leaves, amla (a berry), etc. rich in vitamin A, in their daily diet.

8. Management of Diarrhoea: One of the most common illnesses found in the villages is diarrhoea. However, with the weekly disinfection of wells, the incidence has been reduced by 80%. Home management of diarrhoea is also taught. Each mother learns how to make an 'Antidiarrhoea Mixture' by using 1 teaspoonful of salt, 5 teaspoonfuls of sugar, 1 teaspoonful of baking powder, and 1 teaspoonful of lemon juice in 1 litre of boiled water. The idea of an 'Antidiarrhoea Mixture' has caught on well and has been very useful as a first aid in the management of diarrhoea and prevention of dehydration leading to undernourishment and other complications.

9. Coordination of Activities with Male Staff: All births, deaths, fever cases and children unprotected from smallpox are reported to the basic health workers during their weekly get-togethers so that the latter may take immediate steps to help. Basic health workers are also informed of men wishing to have condoms.

The following services are undertaken by male staff:

1. Detection of Infectious Diseases: Each household is visited by the health staff once a month to give health teaching and to enquire about the occurrence of any communicable diseases such as chickenpox, smallpox, cholera, typhoid, gastroenteritis, malaria, infectious hepatitis, polio, etc.

2. Vital Statistics: Births, deaths and marriages are recorded and reported for each village separately each month.

3. Smallpox: Smallpox search is done during regular visits: special emphasis is on neonatal vaccination, primary vaccination and revaccination at an interval of 3 years. Every Friday is set aside for vaccination.

4. Malaria: Detection of fever cases and collection of blood smears are made. Chloroquine tablets are given as a presumptive treatment. Positive cases are given radical treatment by the health inspectors. Focal spraying is done whenever a positive case of malaria is detected.

5. Tuberculosis: The basic health workers collect sputum from all cases reporting persistent cough with fever for more than 3 weeks. The smear made from the sputum is fixed and sent to the district tuberculosis officer. Once the case is declared positive, domiciliary treatment is given by auxiliary nurse-midwives.

6. Leprosy: Detection and reporting of leprosy cases in their early stages is done by the basic health workers. The diagnosis is done by the leprosy technicians who also start the initial treatment. The follow-up treatment is done by the health staff.

7. Environmental sanitation: Disinfection of wells with TCL (bleaching powder) is carried out once a week. A chart indicating the amount of TCL required for a well of a certain diameter with so much water depth is used. This reduces the calculation problem for the worker and facilitates quick disinfection. The weekly disinfection of drinking wells has helped cut down the incidence of diarrhoea and gastroenteritis by 80%.

8. Family Planning: Identification and maintenance of monthly updated lists of couples in which the wife is in the reproductive phase and who are thus 'eligible' for family planning is done by basic health workers. They also motivate these couples, particularly the men, to accept family planning. Advice on terminal methods for those with more than 2 children is given and conventional methods advised for the others. Nirodh (condoms) are distributed to men acceptors during their monthly visits. The basic health workers also follow up sterilized patients.

9. Health Education: Basic health workers visit each home in their area at least once a month. They give health teaching to the families while collecting information on illnesses

from them. They use simple but effective audiovisual aids such as flash cards, flannelgraphs, recognition cards, etc. Demonstrations are held for groups in various streets in the village.

10. School Health: Schools are visited regularly by basic health workers and health talks are given to the children with the help of various audiovisual aids. Once a year, screening of children is carried out and those found with any defects are referred to the doctor during his weekly clinic. Environmental sanitation and physical education of children are also part of the regular activities.

11. Treatment of Minor Ailments: During house visits, basic health workers provide medical care for fever, cough and cold, diarrhoea, eye infection and first aid for minor injuries, particularly in outlying hamlets. Drugs are always carried by the basic health workers in their house visit kits.

12. Inoculation: Inoculation against cholera and typhoid is carried out by the basic health workers once every 6 months, especially during the pre-monsoon season.

13. Coordination of Activities with Female Staff: All antenatal cases, postnatal cases, deliveries and unprotected children for BCG, Polio, DPT, etc., are reported to the auxiliary nurse-midwives during their weekly meetings.

Some Project Achievements

Between January and May 1974, a survey based on a 10% random sample was conducted to collect baseline data. In January 1976 and again in January 1977, an evaluation survey, also based on a 10% random sample, was conducted. The health data thus collected were coded and then processed by electronic computer. Here are some of the main findings of this comparison:

Table 4

Comparison of baseline health data with evaluation survey health data

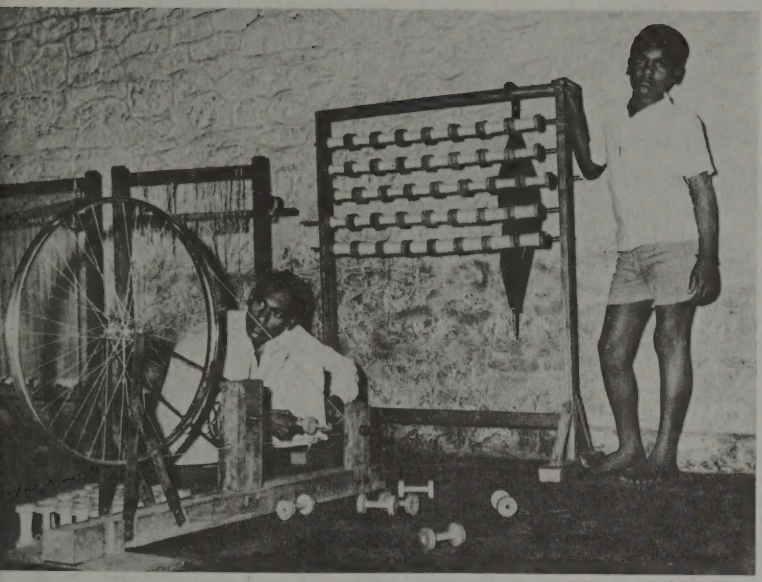
	Jan. 1974	Jan. 1976	Jan. 1977
1. Crude birth rate / 1000 pop.	26.3	24.5	21.4
2. Crude death rate / 1000 pop.	9.8	9.0	8.5
3. General fertility rate / 1000 / women between 15-44	152	115	102
4. Total fertility rate / women between 15-44	3.4	3.1	3.0
5. % of target couples (with 3 or more children) sterilized	30.6	51.7	89.1
6. Maternal mortality rate / 1000 live births	3.7	1.0	0.25
7. Infant mortality rate / 1000 live births	67.6	34.4	23.1
8. Neonatal mortality rate / 1000 live births	42.1	28.0	21.2
9. Post neonatal mortality rate / 1000 live births	25.6	6.5	5.3
10. Primary vaccination against smallpox	85%	98%	99.7%
11. Completed doses of DPT	2%	60%	85%
12. Completed doses of Polio	1.5%	65%	83%
13. Level of BCG vacination	6%	45%	55%

A marked decline (of over 80%) in the incidence of diarrhoea, scabies, gastroenteritis and ascariasis has also been seen, indicating an improvement in the general hygiene and sanitation of the community. Reduction in the incidence of diarrhoea and gastroenteritis is attributed to regular weekly disinfection of wells.

Social Services and Social Justice: One of the most valuable achievements of the project is an indirect result of the process of providing basic health and medical care to all sections of the rural community, which is the project's principal aim. Provision of improved social services and support of social justice in many and varied fields is an inevitable part of providing health services. Although such 'spin-off' cannot be measured in numerical terms, there is nevertheless much tangible evidence for the project's achievements in this area. From its beginning, the Dais, health promoters and village health aides working in the project, who are all from the local

Two Harijan craftsmen teach women of other castes to make leather sandals.

Previously a bonded labourer, this man has been taught a new trade.



Helped by the village youth club, this partially blind young man has learned to spin locally-grown cotton.

villages, have been fully accepted and have served as a vital link between the community and the health team. The auxiliary nurse-midwives and the basic health workers, on the other hand, were not natives of the project villages and they invariably underwent a test of acceptance by the local communities. Except in two cases involving auxiliary nurse-midwives, however, all the non-local health workers passed this test.

As they began living and working with the people and paying regular visits to their homes, there was abundant evidence of the growing faith, confidence and esteem in which they were held. They are regarded as more than just workers: rather as friends of the people. They participate in weddings, 'mundan' ceremonies (first headshaving), naming ceremonies, funerals, etc. People come to them for as wide a variety of reasons as having their letters read or discussing the purchase of bullocks. The female health workers help form 'Mahila Mandals' (women's societies), while male health workers organize men's groups and 'Yuwak Sangh' (youth clubs), which in turn become involved in the development of health and social activities in the villages. For example, whenever a mass immunization programme is to be mounted in a village, it is through these local clubs and societies, the health committees and the village councils, that they are organized. It is these groups who take a keen interest in seeing that each home takes advantage of these services.

The basic health workers also become interpreters of government policies, services and facilities, for example, they are able to help small farmers in securing loans, improved seed, chickens and livestock from the government agricultural extension programme. They become an important link between the Block Development Officer and the community. People, particularly the poorer people, realize that it is advantageous to rally together and organize themselves in groups according to needs and approach the officer concerned collectively, rather than making individual approaches.

During training, all health workers of various religions and castes sit together and take their meals together. This is quite a new experience for all of them. However, one of the most remarkable changes is that Dais from the harijan (low) caste are called upon by upper caste Hindu women to conduct deliveries. The reason they give is that "the Dais are now trained in a scientific method". Whatever the reasoning, a great breakthrough in one of the age-old social customs has taken place.

Through social services organized by the project, a previously destitute Harijan family now have the means to be self-supporting.

The most important need of landless labourers in the project area is to free themselves from bonded labour. Associated with this need is the strangelhold of very high compound interest they are forced to pay on initial loans to certain 'sahukars' (rich businessmen). Twenty years ago, a landless labourer may have borrowed Rs 200 for the marriage of his daughter from a sahukar. Over the years, he would most likely have paid Rs 1000 in interest and still owe the initial loan of Rs 200, not knowing how to get out of this obligation. In order to fight against such exploitation, it is necessary for the landless labourers to organize themselves. This is not an easy

process, but a beginning has been made to help a small group defend its interests against the rich farmers, shoe factory owners and businessmen. With the help of the district authorities, many have been relieved of their bonded labour obligations.

And this is only the beginning of a larger battle against social injustice. By working closely with the village councils on the issue of housing, it has been possible to obtain free plots of land from the councils and some money from the 'Zilla Parishad' (district administration) to enable the labourers to build huts on the land thus acquired. It has taken almost two years to accomplish but, by the end of 1977, 156 such huts had in fact been constructed – a slow but good start.

This success has generated a new type of atmosphere in the rural communities. There is evidence of new hope among the poor. Thus, in the process of providing health services, the local health workers also find themselves, inevitably, in the role of providers of social service and promoters of social justice.

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Eric R. Ram

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